C. L. SCOVILLE.

APPARATUS FOR KINDLING THE FIRES OF STEAM-ENGINES.

No. 181,800. Patented Sept. 5, 1876.

Fig. 1.

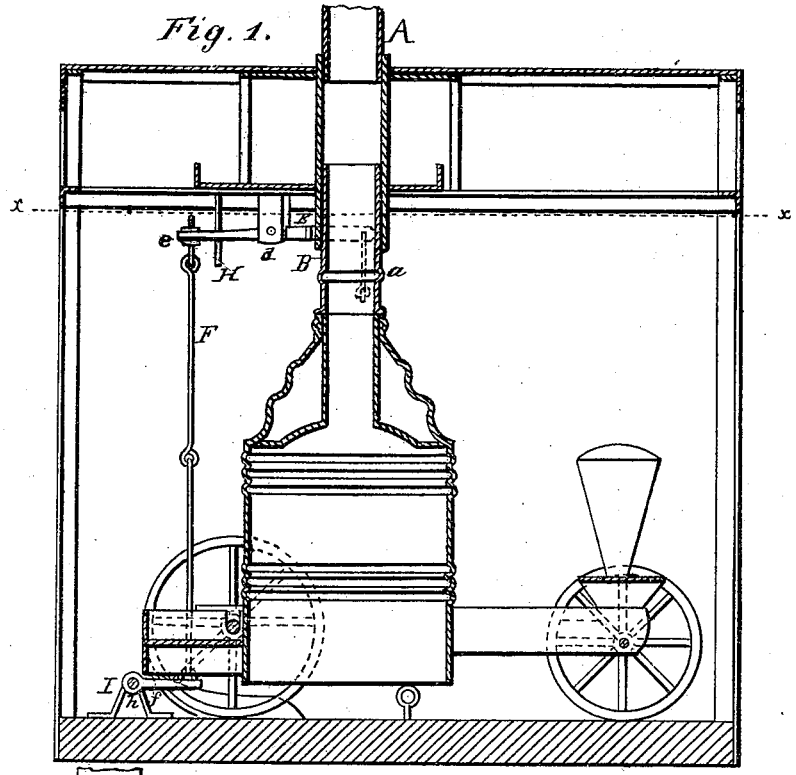


Fig. 2.

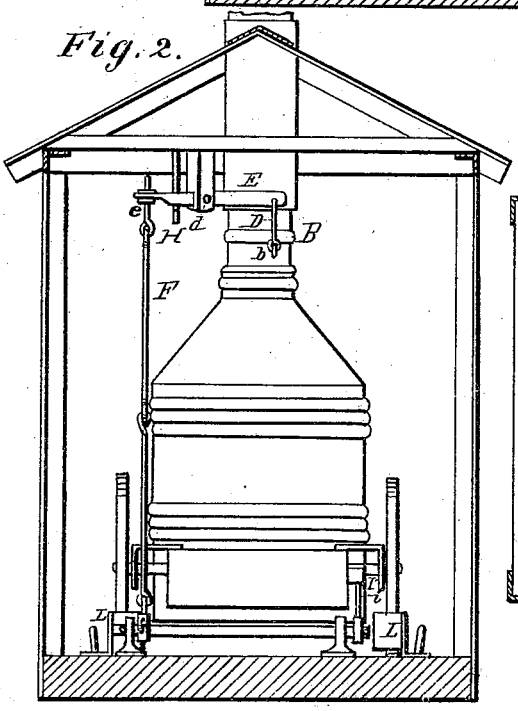
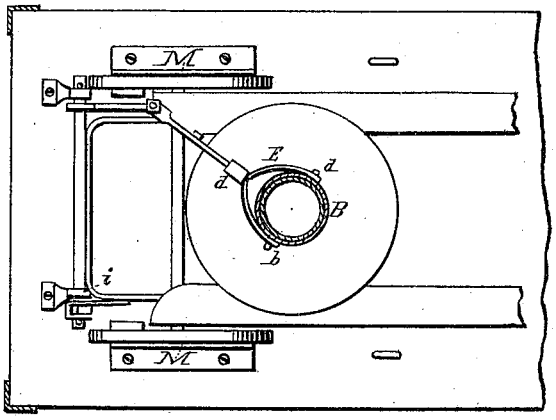


Fig. 3.



Witnesses John A. Taudenschmidt
Charles C. Gill

Inventor
Charles L. Scoville
by his Attorneys
Coe & Co.

UNITED STATES PATENT OFFICE.

CHARLES L. SCOVILLE, OF ASHTABULA, OHIO.

IMPROVEMENT IN APPARATUS FOR KINDLING THE FIRES OF STEAM-ENGINES.

Specification forming part of Letters Patent No. **181,800**, dated September 5, 1876; application filed May 29, 1876.

To all whom it may concern:

Be it known that I, CHARLES L. SCOVILLE, of Ashtabula, in the county of Ashtabula and State of Ohio, have invented a new and useful Improvement in Apparatus for Kindling the Fire of a Steam-Engine, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improved apparatus for kindling the fire of a steam fire-engine, locomotives in round-houses, and other analogous devices.

The object of the invention is to hasten the ignition of the fuel in the fire-box, and thus speed the production of steam in the boiler. The elements of the invention are hereinafter more specifically described.

Figure 1 is a central vertical longitudinal section of a device embodying the elements of the invention. Fig. 2 is an end view of same, partly in section. Fig. 3 is a transverse section through the line *x*.

In the accompanying drawings, A denotes a flue or chimney, suitably placed, and preferably constructed of metal. Within the base of this chimney or pipe is provided the section of pipe or cylinder B, arranged so that its upper parts can slide within the lower parts of the pipe A, and having about its center the annular ridge *a*, to prevent its passing too far up into the pipe above, the base of the cylinder B being made bell-mouthed, or conical, or otherwise suitably conformed to fit snugly over the top of the chimney or smoke-stack of the engine when placed directly below it. Thus, when the cylinder B is down, a direct communication is established with the chimney, the draft whereof is thus communicated to the grate of the fire-box on the engine, which is one of the objects of the invention. To the cylinder B are secured the eyebolts *b*, to which are attached the lower ends of the links D, the upper ends of which pass through perforations at each end of the forked lever E, which is pivoted at about its center in the jaws of the hanger *d*, whence it extends outward, its extremity being connected by a threaded screw eyebolt, *e*, to the chain or rope F. The weight of the cylinder B is such as to overcome that of the devices connected to the other end of the lever F; hence, to prevent the constant contact of the cylinder and smoke-stack, there is provided the spring-stud H, with which the lever comes in contact, and which arrests the ascent of the part opposite the fork. By throwing back this stud the cylinder B descends instantly to place upon the smoke-stack.

The lower end of the rope or chain F is connected with the extremity of the arm *f*, the base whereof is rigidly secured to the shaft I, working in the bearings *h* at each end, and having at the end of the shaft opposite the arm *f* another arm, *i*, which projects upward and is fixedly secured at its base to the shaft I, in such position that its upper extremity may be encompassed by the hook I′ or other suitable device secured to the engine.

The relation of the arms *f* and *i* is such that, when the former is being operated by the chain F through the ascent of the end of the lever E, to which it is attached, the latter—that is to say, the arm *i*—shall stand in a nearly vertical position. To keep the engine in such position as that, the cylinder B may, when depressed, cover the smoke-stack, as aforesaid. Two plates, M, are provided, having their inner surfaces furnished with the curved chocks L, all so placed that, when the rear wheels of the engine are in contact with the chocks, the smoke-stack shall be directly below the cylinder B, and also so that the hook I′ can be placed about the upper end of the arm *f*, though it is evident that any other means that will establish the position of the engine, as aforesaid, will answer the purpose of this portion of the invention.

The object of the threaded screw eyebolt *e* is to regulate the elevation of the cylinder B to engines having smoke-stacks of varying heights, the spring-stud H being appropriately conformed.

The weight of the attachments upon the outer end of the lever E should be less than that of the pipe B.

Operation: The engine being in such position that the rear of its rear wheels is in contact with the curved chocks L, and the pipe or cylinder B elevated and so retained by the spring-stud H, an alarm of fire being given, or it being desired to "fire up" the engine, the spring-stud H is retracted, which releases the lever E, whereupon the cylinder of pipe B in-

stantly descends upon the smoke-stack of the engine, and thus the draft of the chimney A is communicated to the grate of the engine. At the same time, the descent of the pipe B elevates the opposite end of the lever E, drawing the chain F taut, thus raising the arm *f*, and bringing the rear of the arm *i* in contact with the inner arch of the hook I′, so that when the fire is properly kindled the engine can start at once; for, by its movement, the hook I′ draws down the arm *i*, thus depressing the arm *f*, at the other end of the shaft I, which operates the chain F, causing the outer end of the lever E to descend, thus elevating its opposite end, and so lifting the pipe B clear of the smoke-stack of the engine, so that it can start the instant the fire is under sufficient headway, and unimpeded by the connection with the pipe B.

It is obvious that the pipe B may be connected with the pipe A by means of a flexible hose or other suitable tubular device, so that the purpose of the invention can be accomplished where it is inconvenient or impracticable to place the engine so that its smoke-stack shall be directly under the flue or chimney affording the draft.

Preferably, the plates M should be so adjusted as to hold the engine securely, and prevent lateral displacement.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The pipe or tubular-shaped device B, provided with a suitably-shaped mouth for connecting the smoke-stack of an engine with a device affording a draft, in combination with a means of elevating or freeing said device B by the movement of the engine, substantially as specified.

2. The threaded eye-bolt *e*, in combination with the lever E, spring-stud H, and pipe B, as expressed.

3. The chain or rope F, eyebolt *e*, lever E, and pipe B, in combination with the shaft I, having the arms *f* and *i*, substantially as set forth.

4. The plates M, having the chocks L, arranged in relation to each other, to the pipe A, and the shaft I, provided with the arms *f*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing improvement in apparatus for kindling the fire of a steam-engine, as above described, I have hereunto set my hand this 13th day of May, 1876.

CHARLES L. SCOVILLE.

Witnesses:
E. W. RICHARDS,
L. H. JACKSON.